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REGULATIONS

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Governing the Procurement of

LABORATORY WORK



WALTER REED GENERAL HOSPITAL
WASHINGTON, D. C.

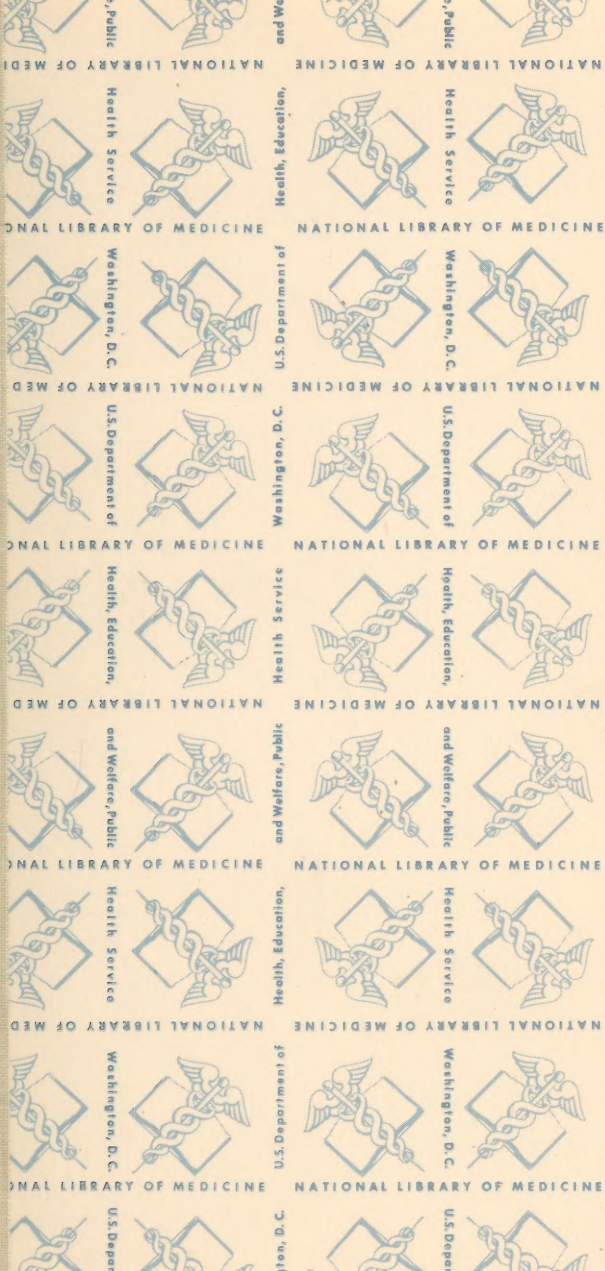
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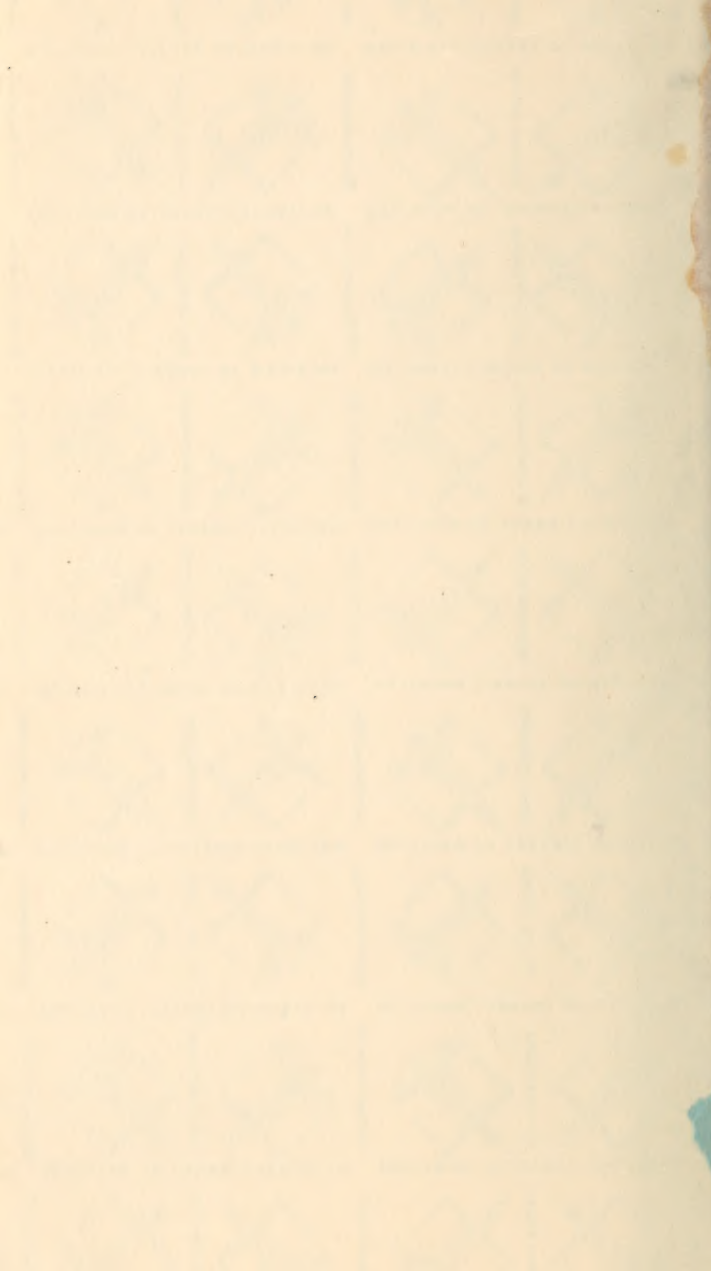
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WALTER REED GENERAL HOSPITAL

WASHINGTON, D. C.

November 15, 1922.

The following regulations for the procurement of Laboratory Work are published for the information and guidance of the personnel of this command.

BY ORDER OF COLONEL GLENNAN:

H. N. Dean,
Adjutant.

WALTER REED GENERAL HOSPITAL

WASHINGTON, D. C.

November 15, 1922

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The following records for the personnel of
Laboratory 17 are published for the information and
reference of the personnel of this command.

By order of Colonel Graham

H. N. Dean

Adjutant

THE LABORATORY AND THE HOSPITAL

Laboratory procedure in connection with the practice of medicine has developed to such an extent that the clinico-pathologic laboratory has been established as a service on a par with the other recognized services. With that established fact, the result of many years research and work, the time has arrived where the services, to secure the greatest benefits possible from the laboratory, must cooperate to their fullest extent and must in certain phases of their relations to the laboratory exercise the same exactness that the chemist does in his analyses.

Slipshod methods of obtaining and handling specimens will nullify the work of the finest laboratory in the country, whereas, on the other hand, careful methods will not only help the work within the laboratory itself, but also will mean a much earlier establishment of a diagnosis, and, with that established, mean an earlier cure of the ailment at hand and a consequent quicker return of a man to duty, which is the ultimate aim of the Medical personnel of the Army. Many times the forwarding of a tentative clinical diagnosis to the laboratory will be of the greatest assistance, as one of the outstanding features of laboratory work is the fact that many of its results are definitely negative or positive and may serve to establish or disprove a tentative diagnosis at once.

Routine ordering of laboratory work is not a sound practice as reports so obtained are routine reports and are generally disposed of in a routine way—such reports do not receive the analysis and consideration that a report having possible import with reference to diagnosis should receive. Pathological findings in body tissues or fluids necessarily mean pathological conditions; hence, in a search for evidence of pathological changes the examination most likely to show such changes should be ordered and the result studied, keeping in mind at all times physiology and pathology which must go hand in hand as the causative factors in any result.

Modern diagnosis is largely a process of elimination. A given condition may simulate a half-dozen or so possible ailments. Perhaps one request to the laboratory will clear up the matter. For instance many times the finding of an eosinophilia in the blood or of parasites in the feces has resulted in a radical change in tentative diagnosis.

In a diagnostic way the laboratory is as valuable to-day to the physician as is his stethoscope, but what is the use of ordering a blood count on a man when he has a primary lesion with a dark field positive for *treponema pallida*? Yet, such often seems to be the method pursued, despite the fact that the youngest worker in the laboratory knows full well that such work is useless and probably ordered only in a routine way. The laboratory worker is, of necessity, trained in laboratory diagnostic methods and in the application of his work to diagnosis and is always ready to give of that knowledge and experience where it will serve a useful purpose. Many times he is in a position to be of real assistance if taken into the confidence of the physician as a consultant and the time is ripe for such cooperation,

PROCURING OF LABORATORY WORK

1. Any and all laboratory work will be requested by a Medical Officer, and the officer making the request will authenticate the forms transmitting the request **by his initials.**

2. Emergency work will be ordered only by a Medical Officer and the results of such work will be telephoned to the officer making the request. Generally speaking emergency requests should be for true emergencies only; since the taking of emergency work means the uncovering of other services in the hospital when such services may have situations which need immediate attention. Emergency requests will be handled in rotation, and will be reported in the same order.

3. As far as compatible with the care of the sick, Saturday, Sunday and Holiday work will be held down to a minimum, generally speaking emergencies only being handled.

4. Accuracy must be observed by all personnel in

handling requests or material to and from the laboratory. Too much care cannot be taken in this regard, as carelessness in collecting specimens or in taking measurements of specimens, etc., will destroy any possible value that the reports of examination may have.

5. All requests for laboratory work will be made on certain forms as prescribed below. These forms will be prepared in duplicate with ink or typewriter and will be forwarded to the laboratory with the patient to be examined, or with the material for examination, or as a request for the laboratory personnel to procure certain material for examination. Whenever possible patients will be sent to the laboratory, as the laboratory personnel is too limited for extended work outside the laboratory.

FORMS TO BE USED

55m, Clinical Record, **Report on Urine.** This form will be used for requests for routine urine examinations, 24-hour urine specimens and emergency urinalyses.

55n, Clinical Record, **Report on Feces.** This form will be used for requests for routine examinations of feces including parasites, fungi, tubercle bacilli, etc.

55o, Clinical Record, **Report on Sputum.** This form will be used for routine examination of sputum, including tubercle bacilli, other bacteria, parasites, etc. (Note! Requests for pneumococcus typing should be made on form 55u, Miscellaneous.)

55p, Clinical Record, **Report on Blood.** This form will be used on all requests for blood counts, routine and emergency, malaria examinations and differential counts. (Form 55u, Miscellaneous, will be used for all requests for serum reactions—typhoid, malta fever, dysentery—for blood cultures, miscellaneous agglutination tests, typing and donors.)

55q, Clinical Record, **Wassermann Test.** This form will be used in requesting Wassermann tests. All forms for **first requests** will be accompanied by form 97 (Wassermann Card) properly executed and **signed** by a Medical Officer. (See Par. 8, A. R. 40-310)

55r, Clinical Record, **Gonococcus Fixation Test.** This form will be used on all requests for Gonococcus fixation. It is accompanied by form 97.

55s, Clinical Record, **Typhoid Report.** This form will be used as a request for examination of food handlers and examination of material from typhoid patients.

55t, Clinical Record, **Report on Stomach Contents.** This form will be used in requesting gastric or duodenal analyses, the particular parts of the analysis desired being properly indicated on the form. (Note! Requests for examination of stomach contents for wood alcohol or poisons will be made on Form 55u, Miscellaneous.)

55u, Clinical Record, **Laboratory Report, Miscellaneous.** This form will be used in requesting T. B. Fixation tests, Spinal Fluid examinations, including colloidal gold, globulin, cell counts, etc.; histo-pathology (tissue examination); blood chemistry examinations; alveolar air determination; special chemical examinations of any kind; functional tests, phenolsulphonephthalein or Mosenthal; wound cultures; throat cultures; Klebs-Loeffler cultures; Vincent's Angina examinations; chest cavity cultures; pneumococcus typing; milk analysis; water analysis; miscellaneous bacterial smears as G. C., etc., agglutination tests; blood cultures; special examinations of urine for bacteria; vaccines; dark field examinations; animal inoculations; basal-metabolism; blood typings; procuring of blood donors; and the determination of the coagulation time of the blood.

Of the forms submitted to the laboratory **in duplicate**, one form is retained as the laboratory record and the other is placed in the ward box at the laboratory when the work is completed. Orderlies will obtain the ward slips daily from the laboratory.

COLLECTION OF SPECIMENS BY THE LABORATORY PERSONNEL.

The laboratory personnel will collect specimens for the following examinations: Wassermann, G. C. and T. B. fixation tests; blood chemistry, including alveolar air; wound cultures; nose and throat cultures and smears; blood for agglutination tests; blood cultures; cultures for the preparation of vaccines; material for dark field examination; make all animal inoculations; obtain necessary material for blood counts, malaria determinations, typings and determination of the coagulation time of the blood.

Blood for the Wassermann, T. B. and G. C. Fixation tests will be taken on Monday and Thursday mornings until 12 noon. Where ever possible the patient will be sent to the laboratory, the blood of strictly bed patients only being collected by laboratory personnel in the ward.

Dark field examination can only be made at the laboratory and all patients for such examinations will be forwarded to the laboratory as it is impracticable to procure the material in the ward for transportation to the laboratory.

Emergencies ordinarily consist of either urinary examinations or white and differential blood counts, or malaria determinations. Under exceptional circumstances portions of a blood chemistry examination may come under the emergency clause. Otherwise all other examinations such as Wassermann, functional tests, sputum examinations, can never be classed as emergency requests. Likewise blood cultures cannot be placed in the category of emergency work as the result of such a culture cannot be obtained within 24 hours and generally 48 hours is required for this examination. The taking of throat cultures may be emergency in certain services but the result cannot be reported in less than 18 to 24 hours.

BY THE WARD, CLINIC OR SERVICE PERSONNEL

Personnel connected with wards and services are responsible for the collection and proper delivery of the following specimens to the laboratory; spinal fluids; tissue for pathological work; routine, emergency and 24-hour urine specimens; gastric contents; urine for functional tests; culture material from chest cavities; sputums; miscellaneous smears for bacteriological examination and feces. These services are also responsible that certain orders with reference to the examination of patients by blood chemistry or basal-metabolic methods are carried out; and that bodies are properly prepared for delivery to the morgue.

SPINAL FLUID.

Spinal fluids will be delivered to the laboratory not later than noon on Mondays and Thursdays. For the proper examination of spinal fluids, it is necessary that they be forwarded to the laboratory immediately after removal from the body as changes rapidly take place in

such fluids which will ruin the accuracy of the greater portion of the examination. **Cell counts cannot be made on old fluids.**

TISSUE SPECIMENS.

Tissue specimens cannot be handled by the laboratory unless delivered **immediately** after removal from the body on account of changes in the tissue, unless it is placed in a proper fixing and hardening fluid which operation is carried out at the laboratory. Where tissues of special interest is removed it is advisable to notify the laboratory by telephone as photographs are often desired or special fixatives may be necessary and suitable arrangements for the handling of such special specimens must be made. On the Form 55u with a tissue specimen the following data should always be given: age, sex and occupation of the patient; tropical service, if any; duration of the condition; pain; rapidity of growth; exact location; why removed; what suspected; and the examination desired.

URINE SPECIMENS.

Routine specimens of urine should preferably be obtained about three hours after eating as at that time the kidney is most active and the specimen is more likely to reveal abnormalities if such exist. The early morning specimen collected before breakfast is of little, if any, value in a proper examination directed at revealing possible kidney conditions.

24 HOUR URINE SPECIMENS.

The complete 24-hour specimen of urine will not be forwarded to the laboratory except when specially requested by that service. Care will be exercised in the ward to see that the entire amount of urine voided in the 24 hours is collected into a suitable container, accurately measured, and a portion of the **mixed** 24-hour specimen forwarded to the laboratory in the small bottles used for routine specimens. The volume voided will be entered on the form 55m accompanying the specimen. Microscopical examination of 24-hour specimens is generally useless on account of changes, the result of standing.

FUNCTIONAL TESTS.

Phenolsulphonephthalein test for Kidney Efficiency as devised by Rowntree and Geraghty: The phenol-sulphonephthalein used in this test comes in ampules containing a little more than one c. c. and can be obtained from the laboratory upon request by the ward surgeon. The patient upon whom the test is to be performed will be given 300-400 c. c. of water 20-30 minutes before injecting the drug, in order to assure a free flow of urine. One c. c. **exactly** of the solution will be **injected intramuscularly** in the lumbar region, the time of the injection being noted. At the end of **one hour and ten minutes** the patients voids and the entire specimen saved and labeled **1st hour**, and at the end of the next hour the specimen is saved and labeled **2nd hour**, both specimens should be forwarded to the laboratory immediately accompanied by Form 55u.

MOSENTHAL TEST FOR KIDNEY FUNCTION.

On the day of the test have the patient empty the bladder at 8:00 A. M. and start the diet for the day which is selected to contain approximately 13-14 grams of nitrogen, 8-9 grams of salt, 1700-1800 c. c. of fluid and considerable purine material in meat, soup, tea and coffee. No solid nor fluid of any kind must be taken between meals and special care must be observed that nothing is eaten or drunk during the night. The meals should start at 8 a. m., 12 noon and 5 p. m., respectively. Collect the urine punctually at the end of every two hour period until 8 p. m. and place in separate labeled bottles showing the time of collecting. Collect the night urine 8 p. m. until 8 a. m. of the following day in another bottle properly labeled. Forward the seven specimens to the laboratory immediately upon completion of the test.

SPECIAL SMEARS ETC.

In certain cases special smears, etc., will be necessary for certain bacterial examinations, etc. These will ordinarily be taken by the Ward Surgeon, suitable sterile containers, microscope slides, etc., being supplied by the laboratory for such work, and will be forwarded to the laboratory without delay for examination. Special care in securing material for culture purposes must be exercised to insure against possible contamination. Gener-

ally speaking the taking of miscellaneous smears and cultures in the ward by personnel outside of the laboratory service is to be discouraged as it often results in false reports on account of contaminations and the lack of proper knowledge as to laboratory procedure in securing such material.

GASTRIC AND DUODENAL CONTENTS

Are removed by a Ward Surgeon and will be forwarded to the laboratory immediately for examination.

VACCINES, ANTI-TOXINS

Vaccines, anti-toxins and other biological products can be obtained from the laboratory upon request.

SPUTUM

Specimens of sputum must be **sputum from the lungs** and **not saliva from the mouth**. These specimens will be collected in suitable bottles supplied by the laboratory and forwarded to the laboratory. **Sputum for pneumococcus typing**, animal inoculations, etc., will be collected in special sterile containers supplied by the laboratory upon request. This material will be forwarded to the laboratory immediately in order that the results may be obtained at the earliest possible moment and suitable treatment instituted.

FECES

Feces specimens will be collected in containers supplied by the laboratory. In some cases where certain special examinations are necessary and the entire stool is needed, special arrangements may be made with the laboratory.

Examinations for **amoeba and other protozoan parasites** **must be made on the warm specimen**, such specimens must be delivered to the laboratory immediately after passing and the attention of the laboratory personnel brought to the specimen to insure its immediate and proper examination.

When examination for occult blood is requested it is essential that the patient should **not have had any meat in his diet for the preceding two or three days** as meat diet will invariably give a positive reaction and may be very misleading.

BLOOD CHEMISTRY

The following directions will be carried out in the ward with reference to patients to be examined by blood chemistry methods: Request for the examination will be forwarded to the laboratory on form 55u and the appointment for the examination will be made from the laboratory. On receiving the information from the laboratory as to the time of taking the chemistry the ward personnel are responsible that the patient is sent to the laboratory and that the specimen of blood is taken with the patient on a fasting stomach—no breakfast will be given to patients for blood chemistry examination until the blood for examination has been obtained.

BASAL--METABOLISM

Basal-metabolism examination is requested upon form 55u and the examination is made on appointment from the laboratory. The ward personnel is responsible for the carrying out of the following instructions:

“Ordinary supper the night before the test. After this meal no food, milk, tea, or coffee until after the test is completed the following morning. Water is given freely as the patient desires. The patient's weight stripped is taken in the ward the night before the test is made. Temperature, pulse and respiration are taken at 7:00 o'clock the morning of the test. This data together with the **patient's clinical record** is forwarded to the laboratory with the patient. The clinical record will be returned to the ward without delay. After the patient retires for the night he is not to get out of bed except to go to the toilet until after the test is made. The morning of the test he is to be kept absolutely quiet and to refrain from talking as much as possible. The patient will be sent to the laboratory on a **litter** by ambulance at 8:45 o'clock the morning of the test. The patient will be provided with bathrobe and slippers and be warmly covered for the trip to the laboratory. If the patient is ambulatory send his clothes with him to the laboratory. Clothing will not be sent with female patients. When the urine nitrogen correction is a part of the test, special instructions to be carried out will be given by the laboratory at the time of making the appointment.”

BODIES FOR THE MORTUARY

Ward personnel also are responsible for the proper preparation and delivery of bodies to the morgue.

Body openings will be suitably tied off or plugged to prevent leakage, **body tagged on great toe and on wrist;** showing name, rank and organization, hour and place of death-- pinned up in a sheet with a tag on the outside and sent to the morgue on a litter in an ambulance accompanied by a notification of death. No body will be received into the morgue without a notification of death. In closing body openings, undertakers prefer that nostrils, eyes and mouth be left alone. It also is advisable to leave off any chin or wrist bandages as dropping of the jaw will be corrected by the undertaker and the folding of the hands is no longer considered proper in the case of the dead.

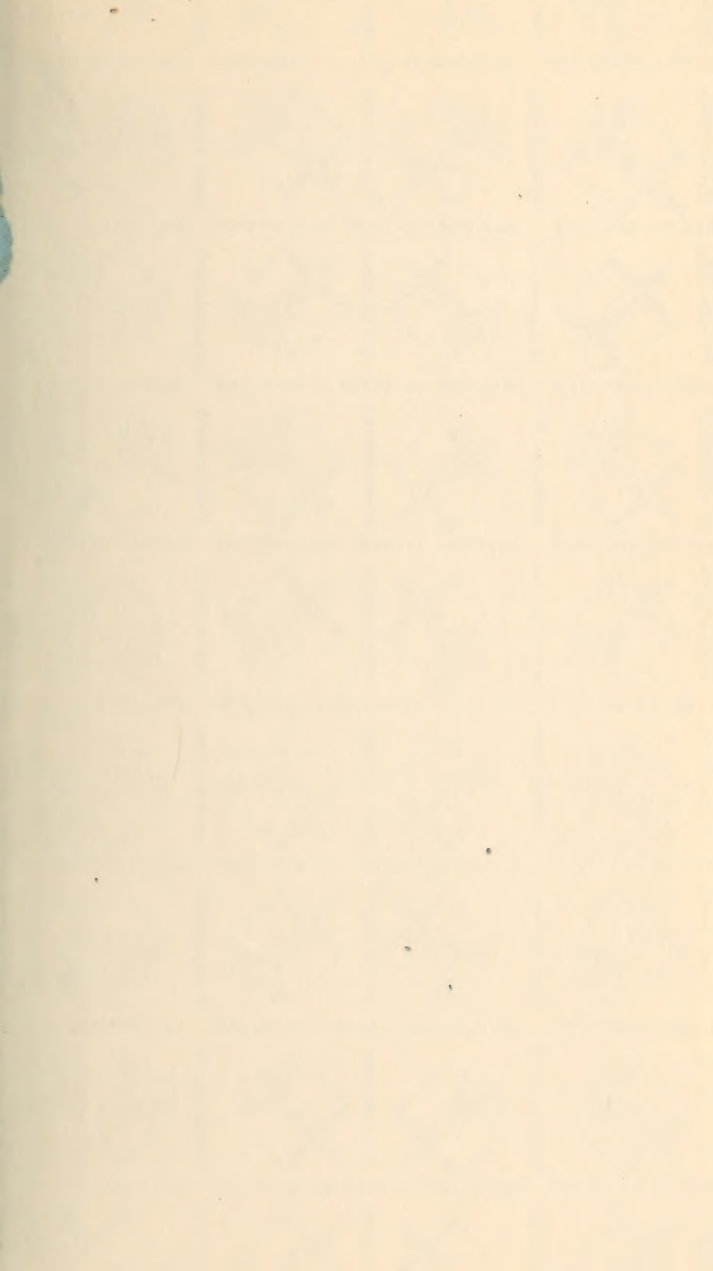
Where autopsies are desired the necessary permits, etc., must be obtained through Chief of Service---Surgical or Medical.

PROCURING GLASSWARE, CULTURE MATERIAL, Etc.

Sputum bottles, routine specimen bottles and feces vials will be supplied by the laboratory without special request. No containers for complete 24-hour urine specimens are available. Only sufficient containers for immediate needs should be drawn and it is expected that these will be returned to the laboratory with the specimens.

Sterile glassware, petri dishes, etc., can be obtained on Form 169 WRGH, which form will be held at the laboratory and will act as a memorandum receipt until the return of the glassware to the laboratory. Some of this glassware is non-expendable and must be accounted for. It is not the desire of the laboratory to be niggardly with supplies but it is necessary to see that undue wastage does not occur. All test tubes, petri dishes, etc., should be returned to the laboratory as such glassware can be used for a considerable time and only requires replacement through breakage.

These forms will be supplied by the Medical Supply Officer to the wards on request.





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